Astronomy test #2 study guide

- **The cosmic background radiation helps support the big bang theory**
- **The universe is approximately 13.7 billion years old**
- **Greater red shifts indicate faster speeds that objects are moving away from us**
- **Based on red-shift observations scientist have concluded that the universe is expanding**
- **Hubble's Law states that galaxies are retreating at a speed that is proportional to its distance**
- **The three types of galaxies are Spiral. Elliptical, and Irregular**
- **Galaxies are large group of stars much bigger then globular clusters**
- **60% of all galaxies are classified as elliptical.**
- **A black holes gravitational effect is so great not even light can escape**
- **The next step in our Suns life cycle is the red giant phase**
- **Our Sun is a main sequence star**
- **When a main sequence star exhausts its hydrogen in the core it will become a red giant**
- **Matter swirling around a black hole emits x-rays when it becomes super-heated**
- **When a Red giants core becomes super-hot, it will convert Helium to Carbon in a nuclear reaction**
- **All stars regardless of size will run out of fuel and collapse**
- **Neutron stars form when protons and electrons merge forming neutrons**
- **A supernova will occur when a massive star nears the end of its life**
- **Hydrogen is the most abundant gas found in emission spectra of the Milky Way**
- **The force most responsible for the formation of a star is gravity**
- **A star is born when a protostar's core becomes hot enough for Nuclear Fusion to begin**
- **All stars form from clouds of gas and dust known as nebula**
- **Blue stars are the most massive stars in the Universe Red stars are the smallest**
- **About 90% of the stars in the universe are main-sequence stars**
- **The H-R diagram shows a relationship between absolute magnitude and temperature**
- **Apparent magnitude is how bright a star appears. The closest stars will always appear to be brighter because they are closer. Absolute magnitude is how bright a star is regardless of distance**
- **Light years measure stellar distances**
- **The Hottest stars in the universe are blue the coolest stars are red**
- **The mass of a star is determined by its color, Blue are the biggest and red are the smallest**

- **Yellow stars like our sun have surface temperatures between 5000-6000 degrees kelvin**
- **The Sun has enough hydrogen for about another 5.5 billion years before it evolves to a red giant**
- **In the equation $E=mc^2$ c is measured as the speed of light**
- **In the core of stars, the product of nuclear fusion is helium**
- **The chromosphere is the thin red glow seen around the sun during a solar eclipse it is the middle layer of the sun's atmosphere**
- **The outermost layer of the sun's atmosphere is the corona**
- **The innermost layer of the sun's atmosphere is the photosphere, which emits the light we see from the sun**
- **Chromatic aberration makes the images from stars weaker**
- **With several radio telescopes linked together, we call the resulting network an interfometer**
- **When an object's wavelength is moving towards you, the wavelength gets shorter**
- **The Doppler Effect is a wavelength changes as it moves towards or away from you**
- **A star's spectrum will tell us the chemical make-up of a star**
- **A continuous spectrum is produced by a solid, liquid, or gas**
- **Light can produce pressure on matter, which suggests it is made of photons**
- **Electromagnetic energy includes radio waves, microwaves, infrared, visible light, ultraviolet, x-rays, and gamma rays**
- **In the visible light portion of the Electromagnetic spectrum red light has the longest wavelength blue the shortest**